REMARKS

Status of the claims:

With the above amendments, claims 8, 12 and 15 have been canceled and claim 1 has been amended. Claims 1, 3-7, 9-11, 13, and 14 are pending and ready for further action on the merits. No new matter has been added by way of the above amendments. Support for the amendment to claim 1 appears at page 24, Table 4 of the written description, in which the maximum core deformation is 4.9 mm and the minimum core deformation is 3.2 mm. Entry of the amendment and reconsideration is respectfully requested in light of the following remarks.

Rejections under 35 USC §103

Claims 1 and 3-15 are rejected under 35 USC §103(a) as being unpatentable over Moriyama '856 (U.S. Patent No. 5,697,856) in view of Sullivan '356 (U.S. Patent No. 6,015,356).

This rejection is traversed for the following reasons.

Present Invention

The present invention, as recited in claim 1, relates to a three-piece solid golf ball comprising a core, an intermediate layer formed on the core, and a cover covering the intermediate layer. The core has a JIS-C surface hardness of 65 to 83 wherein a distribution of JIS-C hardness, when determined at any two points

between the center and the surface of the core has a difference of 5 or less and a deformation of 3.2 to 4.9 mm when applying an initial load of 10 kgf to a final load of 130 kgf on the core. The core is formed from a rubber composition comprising a base rubber, a co-crosslinking agent, an organic peroxide, and an organic sulfide compound. The organic sulfide compound is present in an amount of 0.05 to 5.0 parts by weight based on 100 parts by weight of the base rubber. The intermediate layer has a Shore D hardness of 63 to 70 and has a thickness of 1.0 to 2.5 mm. The cover has a Shore D hardness of 45 to 62, and a Shore D hardness difference between the intermediate layer and the cover is 3 to 20.

Disclosure of Moriyama '856

Moriyama '856 discloses a solid golf ball comprising a core and a cover, wherein the core has a trans structure content in polybutadiene of 10 to 30%. The core is produced by vulcanizing a rubber composition containing a butadiene rubber having cis structure content of not less than 90% before vulcanization, as a base rubber, wherein an amount of trans structure after vulcanization is 10 to 30% and a difference in hardness measured by a JIS-C type hardness tester between the center of the core and each point located from the center to the surface at an interval of 5 mm is not more than 10%. The rubber composition for forming the

core comprises a vulcanizing agent, a filler, an organic peroxide and an organophosphorus compound, in addition to the butadiene rubber having cis structure content of not less than 90% before vulcanization.

Moriyama '856 fails to include all of the hardness properties for the core/intermediate layer/cover golf ball structure of the presently claimed invention.

Disclosure of Sullivan '356

Sullivan '356 discloses a multi-layer golf ball composition having a core, an inner cover and an outer cover producing regulation balls. A smaller and lighter core is produced and metal particles, or other heavy weight filler materials, are included in the inner cover compositions. The heavy weight filler particles, such as powdered metals, are included in a relatively thick inner cover layer (or mantle) formed from an ionomer resin of a solid, three-piece multi-layered golf ball. The size and weight of the core can thereby be reduced in order to produce an overall golf ball which meets, or is less than, the 1.62 ounce maximum weight limitation specified by the United States Golf Association. It has been found that the combination of the present invention produces a golf ball with an increased moment of inertia and/or a greater

radius of gyration and thus generates lower spin due to the increased weight of the inner cover layer.

Sullivan '356 fails to disclose a golf ball with a cover layer having a Shore D hardness within the range of the golf ball of the present invention.

Removal of the Rejection over Moriyama '856 in view of Sullivan '356

The Examiner asserts that the conversion of inches to millimeters in the Table that was submitted with the response of April 3, 2003 was erroneous. Accordingly, the Examiner asserts that the thickness of the intermediate layer in Sullivan '356 does overlap the instantly claimed invention.

Applicants herein present a Table with the corrected values and additional data showing the difference between the instant invention and the disclosures of Moriyama '856 and Sullivan '356.

Elements in claim 1 of the present invention	Moriyama '856	Sullivan '356
Three-piece solid golf ball comprising core, intermediate layer and cover.	O Golf ball comprising core, intermediate layer and cover (column 4, lines 22-29). No examples present	O Golf ball comprising core, inner cover and outer cover (claim 1)
Core has JIS-C hardness of 65 to 83	O 65 to 85 (claim 8)	X No description
Core has hardness distribution within 5.	O hardness difference within 10% (claim 1)	X No description
Core has deformation of 3.2 to 4.9 mm.	X 2.9 to 3.1 mm (Table 3: compression strength)	□ 78 to 130 (Riehle)
Intermediate layer has Shore D of 63 to 70.	X No description	O 65 or more (claim 3)
Cover has Shore D of 45 to 62.	□ No description but 50:50 mixture of Hi-milan 1605 and 1706 is present[1] (column 7, lines 16-24)	O 65 or less (claim 10)
Hardness difference of (intermediate layer) - (cover) is 3 to 20	X No description	O 70-56 = 14 in column 33, Shore D value of Mantle and Cover
Core is formed from a rubber composition comprising base rubber, co-crosslinking agent, organic peroxide, and organic sulfide compound being present in an amount of 0.05 to 5.0 parts by weight based on 100 parts by weight of the base rubber.	O Column 1, line 66 to column 2, line 64 and Table 1	X No description of organic sulfide compound (column 25, line 66 to column 29, line 25; and Table in column 32)
Intermediate layer has a thickness of 1.0 to 2.5 mm.	X No description	O 0.01 to 0.200 inch (0.25 mm to 5.08 mm) claim 1

[1] Table 3 of the present specification contains a mixture of Hi-milan 1605: 1706 = 50:50 (see B and E). B contains a higher amount of tungsten powder and E contains titanium oxide and barium sulfate. Thus, the shore D hardness may be similar.

Moriyama '856 does not disclose or suggest any details of three-piece solid golf balls because Moriyama '856 fails to disclose any examples of a three-piece golf ball. Sullivan '356

does suggest a three-piece solid golf ball, however, Sullivan '356 does not disclose the hardness distribution of the core.

The present invention is directed to a three-piece solid golf ball having a two-layered cover (i.e., an intermediate layer and a cover) and a rubber solid core. In the present invention, the core is controlled so that the core has JIS-C surface hardness of 65 to 93 and a deformation amount of 2.8 to 5.3 mm when applying an initial load of 10 kgf to a final load of 130 kgf on the core, a JIS-C hardness of the core is substantially uniform from its center to its surface, the intermediate layer has Shore D hardness of 63 to 70, the cover has Shore D hardness of 45 to 62, and a Shore D hardness difference between the intermediate and cover layer of 3 to 20.

The golf ball of the present invention has a cover, which is softer than the intermediate layer. The golf ball that has a softer outer layer shows good shot feel and possesses excellent controllability in comparison with the two-piece solid golf ball (as is present in Moriyama '856). However, even if a three piece solid golf ball has a softer outer layer, the golf ball does not show proper controllability and shot feel unless a hardness of a core is controlled to a proper range, as is explained at page 3, line 3 to page 4, line 4 of the present written description. In the present invention, suitable hardness distributions of the core

for the two layered three piece solid golf ball having a softer outer layer has been found and excellent controllability and shot feel for three piece solid golf ball has been attained without deteriorating other properties inherent to solid golf balls.

The combination of features as claimed in claim 1 is neither disclosed nor suggested by either of Moriyama '856 or Sullivan '356. If the core is not properly controlled to a proper range when a softer cover is employed, the golf ball will not have good controllability and shot feel. Because neither of Moriyama '856 or Sullivan '356 suggest or disclose this relationship of a softer cover with the carefully controlled core, Applicants submit that the rejection should be removed.

Moreover, the core, as presently claimed, is neither disclosed nor suggested by either of Moriyama '856 or Sullivan '356. Please see the table above. Moriyama '856 discloses a deformation amount of 2.9 to 3.1 mm, which falls outside of the claimed 3.2 to 4.9 mm. Sullivan '356 also fails to disclose this range. Thus, because all of the elements of the instant invention have not been met by the references, the rejection is inapposite. Withdrawal of the rejection is warranted and respectfully requested.

With the above remarks and amendments, it is believed that the claims, as they now stand, define patentable subject matter such

that passage of the instant invention to allowance is warranted. A Notice to that effect is earnestly solicited.

Pursuant to 37 C.F.R. §§ 1.17 and 1.136(a), Applicant(s) respectfully petition(s) for a three (3) month extension of time for filing a reply in connection with the present application, and the required fee of $950.00 is attached hereto.

Conclusion

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact T. Benjamin Schroeder (Reg. No. 50,990) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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